

REMARKS

Claims 1-24 are currently pending in the application. Claims 1, 8, 9, 16 and 23 have been amended herein. No claims have been added or canceled. Accordingly, following the entry of the present amendment, claims 1-24 will be pending in the application.

Claims 1-24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Published Patent Appl. No. 2001/0030970 to Wiryaman et al. (hereinafter referred to as "Wiryaman"). Applicants respectfully traverse the rejection. Independent claims 1, 8, 9, 16, and 23 have been amended to more explicitly claim features that were previously inherent in the claims.

Independent claim 1, as amended, is directed to a method performed on at least one processor for multiplexing applications, the method comprising the steps of: (a) providing at least one access server that has access to at least one application, the at least one application capable of having a plurality of running instances, each of the instances capable of receiving and processing requests; (b) receiving a request from at least one client at the access server to access the at least one application; (c) based on the received request, establishing a communication link between the at least one access server and the at least one client; (d) storing the received request in an input request queue with other received requests, wherein the number of received requests may be greater than the number of running instances; (e) checking for an available communication path to the requested application, an available communication path being present when an instance of the requested application is available and ready to accept a new request; (f) when an available communication path is available, establishing the communication path between the input request queue and the at least one application; (g) removing the stored request; and (h) sending the stored request to the requested application.

Wiryaman is directed to a network access device. The access device optimizes network traffic, or bandwidth, by examining the routing information (e.g. network addresses) on packets sent over the network and seeks to improve network performance by a combination of prioritization and proxying. As described at page 2, paragraph 49, "[a]ccess device 220 is a device that monitors traffic flowing through it, implements a user interface for setting

configurable policies based on the characteristics of the monitored traffic, and enforces the configured policies.” Further, paragraph 50 on page 3 explains “the policies that are enforced by access device 220 relate to allocation and use of communication resources related to communication passing between LAN 130 and WAN 110.” The policies described include prioritization, where some packets are allowed to proceed over the network (WAN 110) while others are held back to reduce congestion, as described at page 4, paragraphs 63-64. Wiryaman discloses that a policy table may be used that specifies how different classes of inbound or outbound data flows are to be processed. The policies may also include proxying, where packets of data are re-routed to less busy/congested destinations that are deemed to be equivalent to the original destination recorded in the incoming data packet, as described at paragraph 65 on page 5. Importantly, Wiryaman is directed to data packets transmitted over a data network, in which traffic over one or more network devices is sought to be optimized.

To the contrary, the present invention, as claimed in claim 1, is directed to multiplexing applications, and running instances of applications that process requests from one or more clients. In this manner, the present invention helps deploy applications efficiently and cost effectively by queuing requests to applications and forwarding the application request when a communication path to the application is available, such an available communication path being present when an instance of the requested application is available and ready to accept a new request. Wiryaman contains no teaching or suggestion of checking for an available communication path to an application. Furthermore, Wiryaman contains no notion of monitoring instances of applications, and therefore contains no teaching or suggestion of storing received requests in an input request queue with other received requests, wherein the number of received requests may be greater than the number of running instances of the requested application. Because Wiryaman contains no teaching or suggestion of the above-described claim elements, there is also no teaching or suggestion of establishing the communication path between the input request queue and the at least one application when a communication path is available; removing the stored request; and sending the stored request to the requested application. Accordingly, it is submitted that claim 1 is patentable over Wiryaman. Furthermore, claims 2-8, which depend (directly or indirectly) from independent claim 1, are also patentable for at least the same reasons as described with respect to claim 1.

Independent claim 8 is directed to a method performed on at least one processor for multiplexing applications, the method comprising the steps of: (a) initializing at least one requests handler and at least one application handler; (b) accepting at least one request from at least one client to access at least one application; (c) passing the accepted request to an initialized request handler; (d) completing a service request based on the passed accepted request; (e) putting the completed service request in an input queue; (f) using an application handler to get the completed service request put in the input queue, the number of completed service requests in the input queue being greater than the number of applications capable of processing the completed service requests; (g) sending the got completed service request to the at least one application when at least one application is available to process the service request; (h) performing the completed service request; and (i) returning the completed service.

As discussed above, Wiryaman is directed to managing network traffic in order to optimize network bandwidth and data traffic over various network devices. It is submitted that Wiryaman contains no teaching or suggestion of the invention as claimed in claim 8. In particular, it is submitted that Wiryaman contains no teaching or suggestion of using an application handler to get the completed service request put in the input queue, the number of completed service requests in the input queue being greater than the number of applications capable of processing the completed service requests; and sending the got completed service request to the at least one application when at least one application is available to process the service request. Further, because the cited reference contains no teaching or suggestion of the above-described claim elements, there is also no teaching or suggestion of initializing at least one requests handler and at least one application handler; accepting at least one request from at least one client to access at least one application; passing the accepted request to an initialized request handler; completing a service request based on the passed accepted request; putting the completed service request in an input queue; performing the completed service request; and returning the completed service. Accordingly, it is submitted that claim 8 is patentable over Wiryaman.

Independent claim 9 is directed to an apparatus for service multiplexing, the apparatus comprising: at least one access server capable of providing access to at least one application providing at least a first service that has an associated cost; the at least one access server

comprising at least one agent and at least one service concentrator; and the at least one service concentrator comprising at least one application handler, at least one input service queue, and at least one request handler, such that the at least one access server is adapted to receive multiple requests from multiple clients to access the first service at the at least one application and the at least one service concentrator is adapted to multiplex the multiple requests to access the first service at the at least one application and thereby divide the cost associated with the first service among the multiple clients.

As described above, Wiryaman is directed to managing network traffic in order to optimize network bandwidth and data traffic over various network devices. Furthermore, Wiryaman contains no teaching or suggestion of applications available on the network that are capable of processing service requests, with each instance of the application having an associated cost. Accordingly, there is no teaching or suggestion in the cited reference for an apparatus having at least one access server capable of providing access to at least one application providing at least a first service that has an associated cost; the at least one access server comprising at least one agent and at least one service concentrator; and the at least one service concentrator comprising at least one application handler, at least one input service queue, and at least one request handler, such that the at least one access server is adapted to receive multiple requests from multiple clients to access the first service at the at least one application and the at least one service concentrator is adapted to multiplex the multiple requests to access the first service at the at least one application and thereby divide the cost associated with the first service among the multiple clients. Therefore, it is submitted that claim 9 is patentable over the cited reference. Furthermore, claims 10-15, which depend (directly or indirectly) from claim 9, are also patentable over the cited reference for at least the same reasons as claim 9.

Independent claim 16 is directed to a computer program product comprising a computer usable medium including computer readable code embodied therein for processing data to control at least one requests for access to at least one application, the computer usable medium comprising: (a) a request receiving module configured to receive at least one request for access to the at least one application; (b) a communication establishing module configured to establish a communication link with at least one client requesting access to the at least one application; (c) a storing module configured to store the at least one received request; (d) a checking module

configured to check whether a communication path that is capable of allowing access to the at least one application is available; and (e) the communication establishing module further configured to establish a communication link with the at least one application, wherein the number of requests for access to the at least one application are capable of being greater than the number of requests capable of being processed by the at least one application.

As discussed above, Wiryaman is directed to managing network traffic in order to optimize network bandwidth and data traffic over various network devices. It is submitted that Wiryaman contains no teaching or suggestion of the invention as claimed in claim 16. In particular, it is submitted that Wiryaman contains no teaching or suggestion of using an a checking module configured to check whether a communication path that is capable of allowing access to the at least one application is available; and a communication establishing module configured to establish a communication link with at least one application, wherein a number of requests for access to the at least one application are capable of being greater than the number of requests capable of being processed by the at least one application. Therefore, it is submitted that claim 16 is patentable over the cited reference. Furthermore, claims 17-22, which depend (directly or indirectly) from claim 16, are also patentable over the cited reference for at least the same reasons as claim 16.

Independent claim 23 is directed to a computer program product comprising a computer usable medium including computer readable code embodied therein for processing data to control at least one requests for access to at least one application, the computer usable medium comprising: (a) a request receiving module configured to receive at least one request for access to the at least one application; (b) a first communication establishing module configured to establish a communication link with at least one client requesting access to the at least one application; (c) a storing module configured to store the at least one received request; (d) a checking module configured to check whether a communication path that is capable of allowing access to the at least one application; and (e) a second communication establishing module configured to establish a communication link with the at least one application, wherein the first communication establishing module is configured to establish more communication links than the second communication establishing module.

As discussed above, Wiryaman is directed to managing network traffic in order to optimize network bandwidth and data traffic over various network devices. It is submitted that Wiryaman contains no teaching or suggestion of the invention as claimed in claim 23. In particular, it is submitted that Wiryaman contains no teaching or suggestion of a second communication establishing module configured to establish a communication link with at least one application, wherein a first communication establishing module that communicates with client(s) is configured to establish more communication links than the second communication establishing module. Therefore, it is submitted that claim 23 is patentable over the cited reference. Furthermore, claim 24, which depends from claim 23, is also patentable over the cited reference for at least the same reasons as claim 23.

Enclosed herewith is a Petition for Extension of Time for one month, and the fee associated therewith, thereby extending the period for response from April 12, 2005 to May 12, 2005. No claim related fees are believed to be due with this response. In the event any additional fees are due, please debit Deposit Account 08-2623.

The application now appearing to be in form for allowance, reconsideration and allowance thereof is respectfully requested.

Respectfully submitted,

HOLLAND & HART LLP

By: 

Kenneth C. Winterton, Esq.
Registration No. 48,040
P.O. Box 8749
Denver, Colorado 80201-8749
(303) 473-2700, x2717

Date: May 10, 2005
3363245_1.DOC